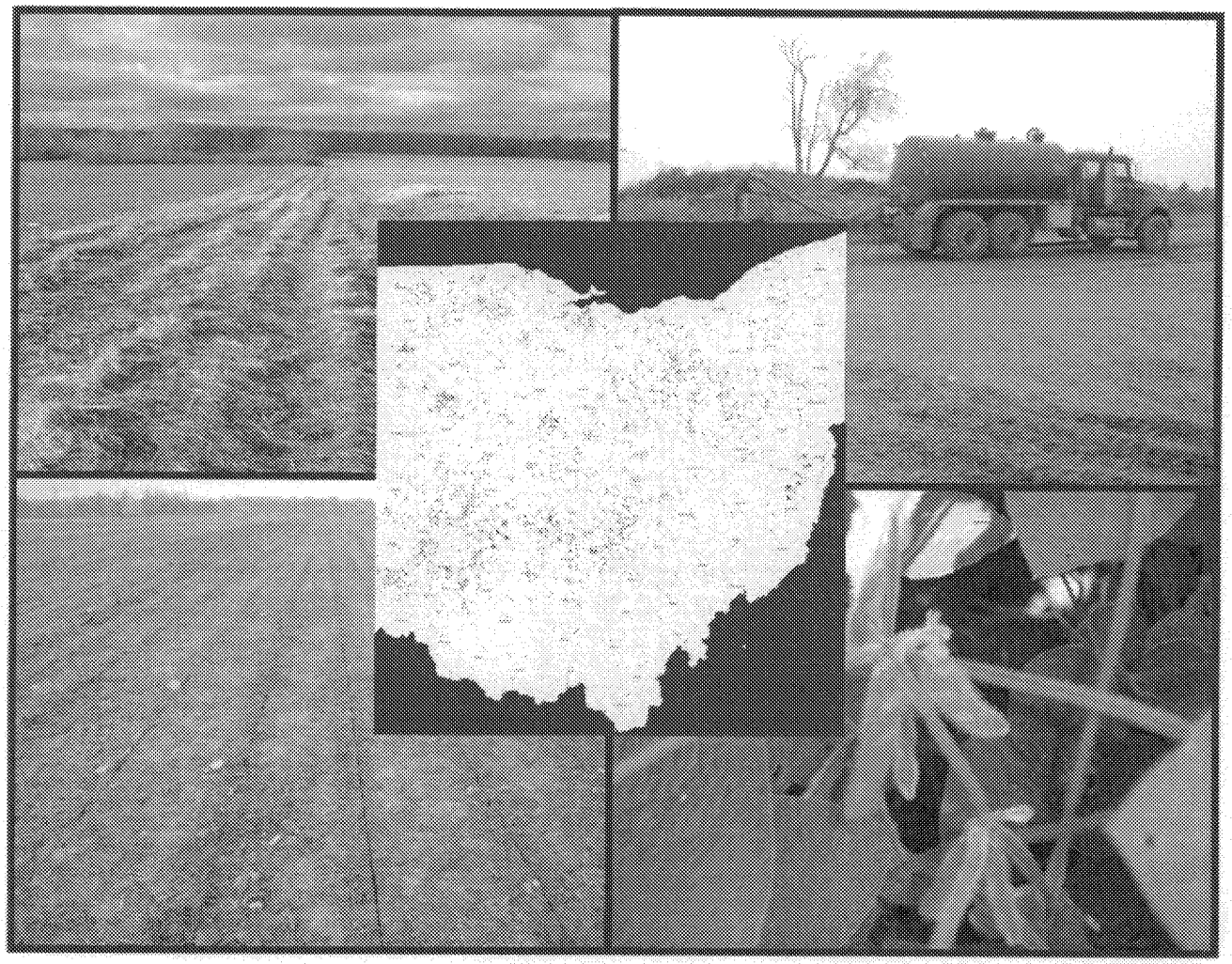
Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

Division of Surface Water

Application for Authorization: Class B Biosolids Beneficial Use Sites



RINGLER ENERGY, LLC

Farm - Name
■ Ashley Farm(229.88 ac)

WILLIAM THURSTON
Cty:Morrow,OH Twp:Peru

2/15/2016 10:13:11 AM

Ag Leader Technology SMS Advanced

Division of Surface Water
Application for Authorization: Class B Beneficial Use Sites

Biosolids Treatment Works Information

Treatment works name: Ringler Energy, LLC		
Ohio NPDES permit #: 4IN00204*AD	County: Morrow	
Mailing address: 2279 Co. Rd. 156		
City: Caroington	State: OH	Zip: 43315
Operator of record: Alex Ringler		
Telephone number: 419-253-5300		
Email address (if available): Alex@Ringlerenergy.com		

Certification Statement

1. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

2. I have read and understand Chapter 3745-40 of the Ohio Administrative Code (OAC) and I agree to beneficially use biosolids in accordance with all applicable beneficial use requirements and restrictions established in Chapter 3745-40 of the Ohio Administrative Code.

3. I agree to only beneficially use biosolids that have satisfied a pathogen reduction alternative and a vector attraction reduction option and have metals concentration below the pollutant ceiling concentrations as established in Chapter 3745-40 of the Ohio Administrative Code.

4. I agree to maintain all applicable records established in Chapter 3745-40 of the Ohio Administrative Code.

Signature _____ Date 2/12/16

This form shall be signed by the operator of record for the treatment works.

Owner Consent for Beneficial Use

Beneficial use site owner: Shady Haven Farms LLC (Shady Haven Farms LLC)		
Mailing address: 6331 Mcvey Rd		
City: Delaware	State: OH	Zip: 43015
Telephone number: 740 - 524 - 2337		
Email address (if available):		

Certification Statement

1. I agree to allow biosolids generated by the treatment plant identified on Form BUA-1 to be beneficially used on my property at agronomic rates.

2. I agree to allow federal, state and local regulatory staff access to the beneficial use site for the purposes of inspecting and authorizing the beneficial use site, beneficially using biosolids, and collecting and analyzing samples from the beneficial use site. I reserve the right to ask the above parties for proper identification at any time.

3. I certify that I am holder of legal title to the property described on application form BUA-4, or am authorized by the holder to give consent for the land application of biosolids, and that there are no restrictions to the granting of consent under this form.

William Thurston own mgr 2/12/16
Signature Date

For purposes of this form, "beneficial use site owner" means the person who owns the legal rights to the proposed beneficial use site. In the event the owner of the beneficial use site changes, Form BUA-2 must be revised and resubmitted to Ohio EPA.

Beneficial Use Site Operator Consent for Beneficial Use

Beneficial use site operator: Shady Haven Farms LLC		
Mailing address: 6331 McCoy Rd.		
City: Delaware	State: OH	Zip: 43015
Telephone number: 740-524-2387		
Email address (if available):		

Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.

William Thurston Jr. Member 2, 12, 16
Signature Date

For purposes of this form, "beneficial use site operator" means the person who plants, grows, harvests or otherwise manages feed crops, fiber crops, food crops or pasture land on the proposed beneficial use site. In the event the operator of the beneficial use site changes, Form BUA-3 must be revised and resubmitted to Ohio EPA.

Beneficial User Information

Beneficial user: RINGLER ENERGY, LLC		
Contact person: ALEX RINGLER		
Mailing address: 461 ST RT 61		
City: MILAN CO	State: OH	Zip: 43334
Telephone number: 419-253-5300		
Email address (if available): ALEX.@RENERGY.COM		

Certification Statement

I agree to be responsible for complying with all applicable beneficial use requirements established in Chapter 3745-40 of the Ohio Administrative Code.

Signature

2/12/16
Date

For purposes of this form, the "beneficial user" means the person who sprays or spreads Class B biosolids onto the surface of the beneficial use site, injects below the surface of the beneficial use site, or incorporates into the soil of the beneficial use site, for the purpose of providing an agronomic benefit.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-1

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 34.02" N	**Longitude: 82° 53' 09.76" W**

Total acreage proposed for beneficial use: 24.59

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 5.2

Bedrock depth (feet): avg. >3ft

Soil phosphorus (ppm): 13

Bray Kurtz P1 ☐
Mehlich 3 ☒

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-2

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24" 34.52" N	**Longitude: 82° 53' 13.11" W**

Total acreage proposed for beneficial use: 24.16

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 5.7

Bedrock depth (feet): avg. >3ft

Soil phosphorus (ppm): 17

Bray Kurtz P1 ☐
Mehlich 3 ☒

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-3

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 34.96" N	**Longitude: 82° 53' 17.00" W**

Total acreage proposed for beneficial use: 24.67

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 5.0

Soil phosphorus (ppm): 21

Bray Kurtz P1 ☐
Mehlich 3 ☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-4

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 35.33" N	**Longitude: 82° 53' 22.60" W**

Total acreage proposed for beneficial use: 24.71

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 5.4

Soil phosphorus (ppm): 8

Bray Kurtz P1 ☐
Mehlich 3 ☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes ☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes ☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-5

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 35.71" N	**Longitude: 82° 53' 28.99" W**

Total acreage proposed for beneficial use: 20.31

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 4.6

Bedrock depth (feet): avg. >3ft

Soil phosphorus (ppm): 16

Bray Kurtz P1 ☐
Mehlich 3 ☒

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwd5C2	Glynwood clay loam, 6 to 12 percent slopes, eroded	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-6

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 35.75" N	**Longitude: 82° 53' 32.91" W**

Total acreage proposed for beneficial use: 20.99

Type of beneficial use to be performed:

Surface application	☒
Injection or immediate incorporation	☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 4.7

Soil phosphorus (ppm): 17

Bray Kurtz P1	☐
Mehlich 3	☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwd5C2	Glynwood clay loam, 6 to 12 percent slopes, eroded	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-7

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 35.92" N	**Longitude: 82° 53' 36.37" W**

Total acreage proposed for beneficial use: 20.69

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 5.0

Soil phosphorus (ppm): 19

Bray Kurtz P1 ☐
Mehlich 3 ☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-8

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 36.18" N	**Longitude: 82° 53' 38.41" W**

Total acreage proposed for beneficial use: 20.43

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 4.8

Soil phosphorus (ppm): 13

Bray Kurtz P1 ☐
Mehlich 3 ☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-9

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 36.20" N	**Longitude: 82° 53' 41.53" W**

Total acreage proposed for beneficial use: 14.46

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 4.6

Soil phosphorus (ppm): 7

Bray Kurtz P1 ☐
Mehlich 3 ☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-10

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 32.24" N	**Longitude: 82° 53' 45.74" W**

Total acreage proposed for beneficial use: 11.45

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 5.9

Soil phosphorus (ppm): 6

Bray Kurtz P1 ☐
Mehlich 3 ☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-11

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 32.30" N	**Longitude: 82° 53' 50.20" W**

Total acreage proposed for beneficial use: 12.53

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 6.5

Soil phosphorus (ppm): 12

Bray Kurtz P1 ☐
Mehlich 3 ☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Beneficial Use Site Information

Ohio EPA Site I.D. (Ohio EPA Use Only)

Field site I.D.: 250-12

Beneficial use site location: Ashley Farm

County: Morrow	**Township: Peru**
Latitude: 40° 24' 30.72" N	**Longitude: 82° 53' 56.77" W**

Total acreage proposed for beneficial use: 10.89

Type of beneficial use to be performed:

Surface application ☒
Injection or immediate incorporation ☒

Ground slope percent:

Less than 15%	☒	15% to 19.9%	☐
Greater than 20%	☐		

Soil pH (s.u.): 5.3

Soil phosphorus (ppm): 8

Bray Kurtz P1 ☐
Mehlich 3 ☒

Bedrock depth (feet): avg. >3ft

Type of crops to be grown:

Crop Type	Expected Yield
Corn	185
Soybeans	50
Wheat	90
Pasture	
Hay	
Other:	

Soil Types:

Soil Unit Symbol	Soil Unit Name	Hydrologic Soil Group	Flooding Frequency Class
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	D	None
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	D	None
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	D	None
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	C/D	None

Applicable isolation distances:

Type of Isolation Distance			
Surface waters of the state	☒	Sinkhole/UIC class V drainage	☐
Occupied building	☒	Private potable water source	☐
Medical care facility	☐		

Are any endangered species or endangered species habitats located on the beneficial use site?

☐ Yes	☒ No

If "Yes" is marked, list the types of endangered species or endangered species habitat:

Have biosolids been beneficially used on the site since July 20, 1993?

☐ Yes	☒ No

If "Yes" is marked, list the biosolids generators and years beneficial use occurred:

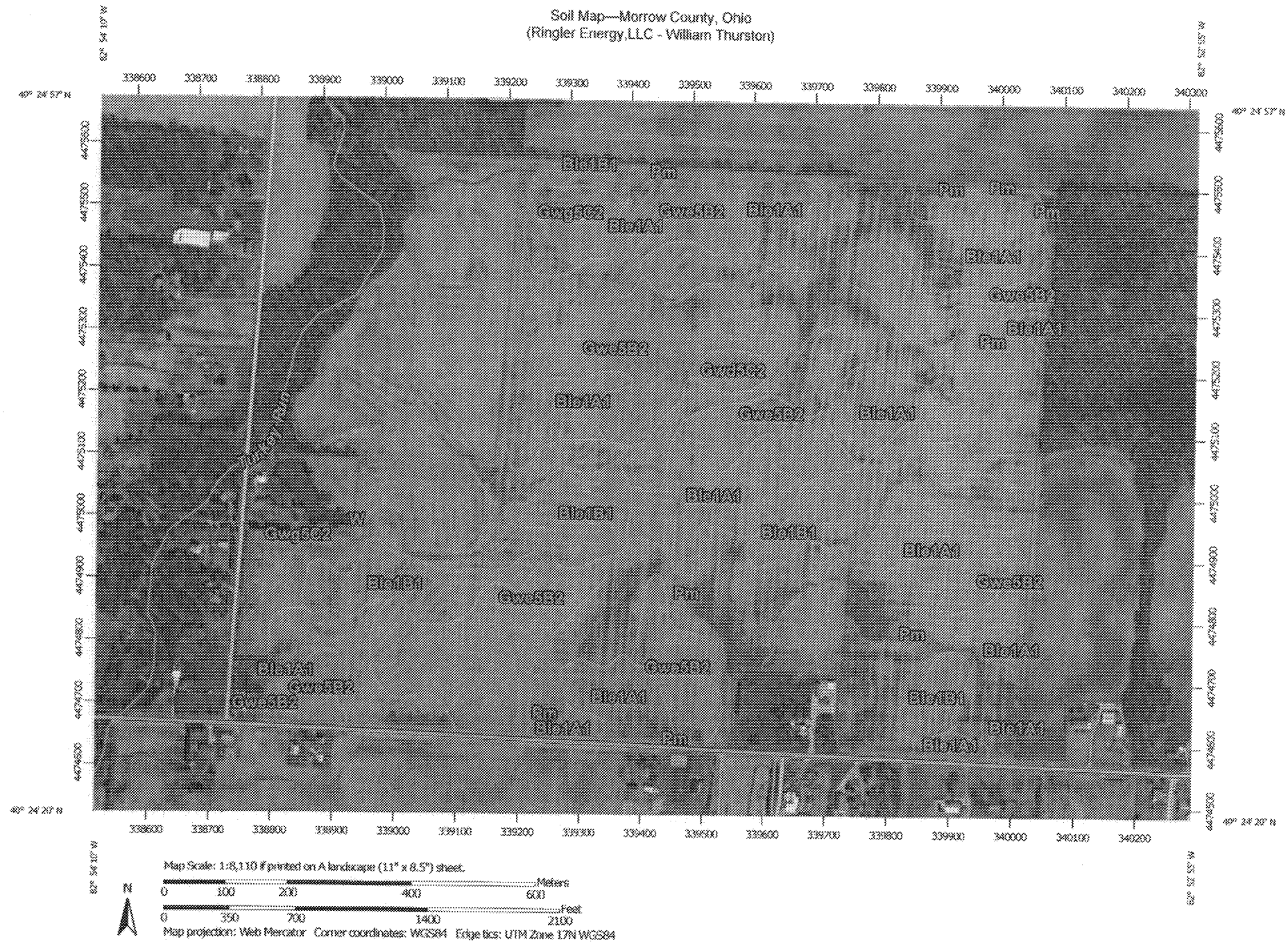
Generator	NPDES permit No.	Year of Beneficial Use

The application must also include all of the following.

☒ A soil map of the proposed beneficial use site.
☒ A frequency flood class map of the proposed beneficial use site.
☒ An aerial map of the proposed beneficial use site that clearly identifies the entrance of the beneficial use site from the nearest road and all applicable isolation distances as established in Chapter 3745-40 of the Ohio Administrative Code.
☒ A vicinity road map at or near the township level that clearly identifies the proposed beneficial use site with all roads labeled.
☒ A copy of the most recent soil test results identified in this form.

Farm - Name
Ashley Farm(229.88 ac)

WILLIAM THURSTON
Cty:Morrow,OH Twp:Peru



Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morrow County, Ohio
Survey Area Data: Version 14, Sep 29, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 27, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Morrow County, Ohio (OH117)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	55.6	24.2%
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	23.2	10.1%
Gwd5C2	Glynwood clay loam, 6 to 12 percent slopes, eroded	1.5	0.7%
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	70.5	30.8%
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	6.8	3.0%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	71.6	31.2%
W	Water	0.0	0.0%
Totals for Area of Interest		**229.4**	**100.0%**

Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

2/11/2016
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- None
- Very Rare
- Rare
- Occasional
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Lines
- None
- Very Rare
- Rare
- Occasional
- Frequent
- Very Frequent
- Not rated or not available

Soil Rating Points
- None
- Very Rare
- Rare
- Occasional
- Frequent
- Very Frequent
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Morrow County, Ohio
Survey Area Data: Version 14, Sep 29, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 27, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Flooding Frequency Class

Flooding Frequency Class— Summary by Map Unit — Morrow County, Ohio (OH117)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	None	55.3	24.2%
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	None	23.1	10.1%
Gwd5C2	Glynwood clay loam, 6 to 12 percent slopes, eroded	None	1.5	0.7%
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	None	70.5	30.8%
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	None	6.8	2.9%
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	None	71.6	31.3%
W	Water	None	0.1	0.0%
Totals for Area of Interest			**228.9**	**100.0%**

Description

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: More Frequent

Beginning Month: January

Ending Month: December

RINGLER ENERGY, LLC

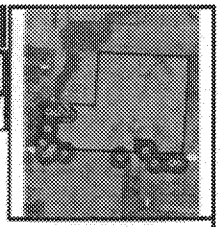
Setback Distance
- ~~ Residence
- ~~ POND
- 100' ~~ Injection Application
- 200' ~~ Pond Injection Application
- 300' ~~ Surface Application
- 33' ~~ Waters of the State

WILLIAM THURSTON
Cty:Morrow,OH Twp:Peru

2/11/2016 11:03:25 AM

Ag Leader Technology SMS Advanced

Query 1



Layer 1 - Setbacks | 2016 | THURSTO

Main Layer

Total area	12.13 ac
Length	17,366 ft
Count	4

Description	Value	Area	Length	Count
Setback Names				
	POND Injection	2.562 ac	1,862.6 ft	1
	Waters of the State	3.039 ac	8,257.6 ft	1
	Injection	0.014 ac	195.22 ft	1
	Surface	6.512 ac	7,050.5 ft	1
Setback Distance				
	200'	2.562 ac	1,862.6 ft	1
	33'	3.039 ac	8,257.6 ft	1
	100'	0.014 ac	195.22 ft	1
	300'	6.512 ac	7,050.5 ft	1

Layer 2 - Ashley Farm | William Thurston

Main Layer

Total area	229.88 ac
Length	15,028 ft
Count	1

Description	Value	Area	Length	Count
Farm - Name				
	Ashley Farm	229.88 ac	15,028 ft	1
Field - Name				
	THURSTON	229.88 ac	15,028 ft	1

2015 – 5 varieties THURSTON 230 A

2016 – 6 varieties

lb/A

BROOKSIDE LABORATORIES, INC.

58251-2

SOIL AUDIT AND INVENTORY REPORT

Name Rincker Energy City Carrington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 01/25/2016

Sample Location ASHLEY			THURSTON	THURSTON	THURSTON	THURSTON	THURSTON
Sample Identification			250-1	250-2	250-3	250-4	250-5
Lab Number			0058-1	0059-1	0060-1	0061-1	0062-1
Total Exchange Capacity (ME/100 g)			24.08	25.82	23.85	16.09	23.20
pH (H_2O 1:1)			5.2	5.7	5.0	5.4	4.6
Organic Matter (humus) %			2.84	3.67	2.98	1.93	2.41
Estimated Nitrogen Release		lb/A	77	87	80	59	68
ANIONS	SOLUBLE SULFUR*	ppm	13	9	8	8	13
PHOSPHORUS	MEHLICH III	lb/A Pas P_2O_5	60	78	96	37	73
		ppm of P	13	17	21	8	16
	BRAY II	lb/A Pas P_2O_5	69	142	119	32	96
		ppm of P	15	31	26	7	21
	OLSEN	lb/A Pas P_2O_5					
		ppm of P					
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	3908	5690	3558	2896	2842
		ppm	1954	2845	1779	1448	1421
	MAGNESIUM*	lb/A	664	794	482	438	360
		ppm	332	397	241	219	180
	POTASSIUM*	lb/A	258	344	274	248	234
		ppm	129	172	137	124	117
	SODIUM*	lb/A	62	46	44	40	44
		ppm	31	23	22	20	22
BASE SATURATION PERCENT							
Calcium		%	40.57	55.09	37.30	46.55	30.63
Magnesium		%	11.49	12.81	8.42	11.34	6.47
Potassium		%	1.37	1.71	1.47	1.98	1.29
Sodium		%	0.56	0.39	0.40	0.54	0.41
Other Bases		%	7.00	6.00	7.40	6.60	8.20
Hydrogen		%	39.00	24.00	45.00	33.00	53.00
EXTRACTABLE MINORS							
Boron* (ppm)			0.54	0.63	0.59	0.40	0.47
Iron* (ppm)			240	315	300	185	262
Manganese* (ppm)			39	17	21	20	14
Copper* (ppm)			2.90	5.66	3.58	2.18	2.87
Zinc* (ppm)			2.94	4.92	2.54	1.57	1.13
Aluminum* (ppm)			1054	961	1020	819	1268
OTHER TESTS	Soluble Salts (mmhos/cm)						
	Chlorides (ppm)						

* Mehlich III Extractable

Thurston 250 A

lb/A

BROOKSIDE LABORATORIES, INC.

58251-2

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Cardington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 01/25/2016

Sample Location ASHLEY			THURSTON	THURSTON	THURSTON	THURSTON	THURSTON
Sample Identification			250-6	250-7	250-8	250-9	250-10
Lab Number			0063-1	0064-1	0065-1	0066-1	0067-1
Total Exchange Capacity (ME/100 g)			26.76	23.69	20.44	14.57	16.29
pH (H_2O 1:1)			4.7	5.0	4.8	4.6	5.9
Organic Matter (humus) %			2.71	2.48	2.26	1.79	2.05
Estimated Nitrogen Release		lb/A	74	70	65	56	61
ANIONS	SOLUBLE SULFUR*	ppm	12	13	15	13	9
ANIONS / PHOSPHORUS	MEHLICH III	lb/A Plus P_2O_5	78	87	60	32	27
		ppm of P	17	19	13	7	6
	BRAY II	lb/A Plus P_2O_5	137	60	60	23	23
		ppm of P	30	13	13	5	5
	OLSEN	lb/A Plus P_2O_5					
		ppm of P					
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	3460	3578	2728	1696	3652
		ppm	1731	1789	1364	848	1826
	MAGNESIUM*	lb/A	456	476	398	266	714
		ppm	228	238	199	133	357
	POTASSIUM*	lb/A	250	200	204	172	178
		ppm	125	100	102	86	89
	SODIUM*	lb/A	40	42	42	38	50
		ppm	20	21	21	19	25
BASE SATURATION PERCENT							
Calcium		%	32.38	37.76	33.37	29.10	56.05
Magnesium		%	7.10	8.37	8.11	7.61	18.26
Potassium		%	1.20	1.08	1.28	1.51	1.40
Sodium		%	0.32	0.39	0.45	0.57	0.57
Other Bases		%	8.00	7.40	7.80	8.20	5.60
Hydrogen		%	51.00	45.00	49.00	53.00	18.00
EXTRACTABLE MINORS							
Boron* (ppm)			0.59	0.46	0.42	0.28	0.30
Iron* (ppm)			294	186	198	144	129
Manganese* (ppm)			11	38	29	61	41
Copper* (ppm)			3.24	2.24	2.14	1.32	1.70
Zinc* (ppm)			1.55	1.83	1.21	1.18	0.98
Aluminum* (ppm)			1245	1013	1076	1042	822
OTHER TESTS	Soluble Salts (mmhos/cm)						
	Chlorides (ppm)						

* Mehlich III Extractable

Thurston 23.4

lb/A

BROOKSIDE LABORATORIES, INC.

58251-2

SOIL AUDIT AND INVENTORY REPORT

Name Ringler Energy City Carrington State OH

Independent Consultant Brookside Consultants of Ohio, Inc. Date 01/25/2016

Sample Location	ASHLEY		THURSTON	THURSTON			
Sample Identification			250-11	250-12			
Lab Number			0068-1	0069-1			
Total Exchange Capacity (ME/100 g)			18.74	17.03			
pH (H_2O 1:1)			6.5	5.3			
Organic Matter (humus) %			2.67	2.29			
Estimated Nitrogen Release		lb/A	73	66			
ANIONS	SOLUBLE SULFUR*	ppm	8	10			
ANIONS / PHOSPHORUS	MEHLICH III	lb/A Pas P_2O_5	55	37			
		ppm of P	12	8			
	BRAY II	lb/A Pas P_2O_5	69	23			
		ppm of P	15	5			
	OLSEN	lb/A Pas P_2O_5					
		ppm of P					
EXCHANGEABLE CATIONS	CALCIUM*	lb/A	4944	2844			
		ppm	2472	1422			
	MAGNESIUM*	lb/A	874	550			
		ppm	437	275			
	POTASSIUM*	lb/A	232	176			
		ppm	116	88			
	SODIUM*	lb/A	52	52			
		ppm	26	26			
BASE SATURATION PERCENT							
Calcium		%	65.96	41.75			
Magnesium		%	19.43	13.46			
Potassium		%	1.59	1.32			
Sodium		%	0.60	0.66			
Other Bases		%	4.90	6.80			
Hydrogen		%	7.50	36.00			
EXTRACTABLE MINORS							
Boron* (ppm)			0.55	0.43			
Iron* (ppm)			172	233			
Manganese* (ppm)			26	36			
Copper* (ppm)			3.04	2.05			
Zinc* (ppm)			2.36	1.76			
Aluminum* (ppm)			798	933			
OTHER TESTS	Soluble Salts (mmhos/cm)						
	Chlorides (ppm)						

* Mehlich III Extractable